Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

PUBLIC HEALTH REPORTS.

[Reports to the Surgeon-General, Public Health and Marine-Hospital Service.]

A study of the vital statistics as regards the prevailing diseases and mortality, of the city of Panama for the year 1903.

By Surg. J. C. PERRY.

Referring to my report, "A study of the vital statistics of Colon," transmitted by my letter of the 7th instant, I have pursued the same line of investigation relative to the prevailing diseases and mortality from the same in the city of Panama for the period of one year. In order to have a basis for these deductions, and in order to ascertain if there is any marked variation in the amount of sickness or in the character of the prevailing diseases in Panama and Colon, such data of both places having a bearing on the canal zone between these two cities, I deemed the subject of sufficient importance to determine as far as possible, by an examination of all available records, the actual morbidity in a resident population—one more or less immune to two of the most important climatic diseases—as indicative of what might be the result in a fresh population for work on the canal, if the existing insanitary conditions are not remedied before such laborers are introduced.

An inspection of Panama would lead one to believe that the morbidity should be lower than that of Colon, but this does not seem to be the fact from an examination of the available records.

As a basis of this report a compilation of the cases treated in the San Tomas Hospital for a period from January, 1903, to February, 1904, inclusive, has been made, as well as mortality statistics from the official records for the year 1903. A transcript of these records was made and furnished this office by Assist. Surg. C. C. Pierce.

The statistics of the San Tomas Hospital are very incomplete, and are of little value except in showing the general morbidity and the frequency with which certain diseases prevail.

It may be pertinent in this connection to state that this institution is the city hospital of Panama, and while it is available for any pay patients, nearly all of those treated are either soldiers, police, or patients of charity. Probably at least three-fourths of the patients are paupers. These facts are mentioned in order to show that in computing the general morbidity the deductions drawn that a much greater number of sick are treated outside of this institution and at their homes are correct.

An examination of the table of the patients and diseases treated in this hospital shows that during the fourteen months embraced therein 2,966 cases were treated during this period, and that of this number

the diagnosis and other data were recorded in 665 instances. Now, deducting the cases that were admitted during January and February, 1904 (422), from the total given above, it will be seen that 2,544 patients were treated in this hospital during 1903. Taking into consideration that few of the better class of inhabitants were treated in this institution and that many mild cases of disease are not admitted to this hospital, but are treated at their homes, a conservative estimate that not more than one-fourth of the total number of the sick in Panama were admitted to the hospital would give an annual morbidity of 10,176 patients.

I consider the above approximately correct. Estimating the population of the city at 18,000 this gives an annual morbidity of 56.53 per cent. Some of the authorities in Panama claim that the population is 25,000. Even admitting this, it may be pertinent to ascertain on this basis if their claim that Panama is a healthy city is substantiated by facts. Such a calculation gives an annual morbidity of 40.70 per cent. Therefore it would seem that an estimate on the most favorable basis shows that approximately one-half of the population is sick during the year. That the above deductions regarding the general morbidity of Panama are not far wrong is shown by the mortality statistics for the past year. Of a total of 1,270 deaths, only 308 were recorded in the San Tomas Hospital.

Taking this fact into consideration, and if we assume that a greater number of mild types of disease are treated at the homes of the patients, it will be seen that the above morbidity rate is based on carefully drawn deductions. If this high morbidity occurs in a native population to a large extent immune to yellow fever and to a certain extent to malarial fevers, the question arises what may be expected in a population of new arrivals subject to the same sanitary conditions.

Having determined the morbidity, it now becomes important to ascertain the character of the diseases that prevail, and whether the most prevalent diseases are climatic and of a class that can be eliminated or diminished by improvement of the sanitary conditions. In this connection the following diseases should receive careful consideration: (1) Malarial fevers, (2) yellow fever.

An examination of the hospital records shows that malarial fever is one of the most frequent diseases in Panama, being exceeded only by tuberculosis. It is, however, extremely probable that the milder cases of malarial fever are not sent to this hospital, and that those embraced in the data were severe types of the disease among the poorer portion of the population. Of the 665 diagnosed cases treated in the San Tomas Hospital, 118 were given as malarial. Of this number of cases 13 were diagnosed as pernicious malarial fever, 12 of which died, and 13 as malarial cachexia, with a mortality of 3. The remaining 92 cases were simply specified as malarial fever without distinction as to type, but, as there was a mortality of 18, it shows that many of the cases were of the æstivo-autumnal variety.

From the above it will be seen that of the 665 cases in which the diagnosis was given only 17.67 per cent were suffering from malarial diseases, but that 9.56 per cent of the total number of deaths in this institution were due to the same. Still, considering that no data were given in 2,301 cases, it is very probable that many mild cases of malarial fever were included in this unclassified number.

An examination of the mortality statistics of the city for the year

1903 shows a record of 213 deaths from fevers variously diagnosed as fever—malarial fever, malaria, bilious fever, and paludic fever—16.77 per cent of the total number of deaths. This is an exceptionally high death rate for malarial fever, and I doubt the correctness of the diagnosis of many of the cases. At the same time the percentage of malarial diseases treated in the San Tomas hospital is far below the average morbidity from this disease on the Isthmus, as it will be shown in another report that the average morbidity of the patients treated in the French Canal hospital, which only includes patients so ill as to require hospital treatment, has been from 25 to 42 per cent for the last five years of all patients treated in that institution.

Furthermore, considering that the majority of the mild cases of malarial fever are not treated in the hospital, I think that a very conservative estimate would be that 50 per cent of the total morbidity of the city of Panama is due to malarial fever.

It is difficult to determine the frequency of the different types of malarial fever from the data at hand, and, as already mentioned in a previous report, statistics on this subject giving a true classification of the types of malarial fever and their relative frequency can be obtained only by a careful and systematic study of a large number of cases.

This work has already been commenced, but has not yet reached sufficient advancement to allow of deductions. A further examination of the tables submitted shows that 13 cases of the 118 treated in the hospital were diagnosed as pernicious, of which 12 died. The mortality statistics for the year show that of the 213 cases recorded as due to malarial fever, 21 were diagnosed as pernicious. There is no question that all types of malarial fever occur in Colon, Panama, and other portions of the Isthmus, and that the pernicious forms, principally the hæmoglobinuric, occur; still it is impossible to determine the exact proportion of such cases from the incomplete records available, though the statistics just quoted would seem to indicate that this type of the disease is rather frequent in Panama.

From the foregoing I believe that malarial fever is less frequent in Panama than in Colon, but there is little difference in the types of the disease and in their severity in the two places.

Relative to the immunity of the native population, Panamans, West Indian negroes, it may be stated that remarks made in the report for Colon, under this heading, hold equally true for Panama. A certain immunity to malarial diseases exists, but it is not so marked as would be expected from the literature on the subject.

Yellow fever.—The presence of yellow fever on the Isthmus with a suitable soil for the propagation of this disease is a matter of vital importance. It is the one infectious disease most to be dreaded on the Isthmus by persons of the white race and others not acclimated or immune.

Every year it claims a number of victims in Panama out of the small nonimmune population that comes within its gates. Under the existing conditions the danger to a large influx of susceptible material can not be too strongly emphasized. Panama constitutes a fruitful soil for the propagation and spread of this disease. An examination of the mortality statistics shows that there were 55 deaths from yellow fever in Panama during the year 1903, and the records of the San Tomas Hospital show that 30 cases of this disease, 24 deaths, were

treated in that institution during the same period. The infection is constantly present, and only needs susceptible material for the disease to assume epidemic proportions.

In this connection I will quote from the report of Dr. P. Lacroisade, who has been in charge of the Canal Hospital in Panama for the past eighteen years. He says that from the commencement of March to December 15, 1899, there were in and near Panama 189 cases of yellow fever; that most of the cases were either sailors arriving at Panama or Colombian soldiers—nonimmune material. The town of Colon also suffered from an epidemic of this disease during that year.

In 1900 the disease reappeared in March, and from March 1 to September 10, 138 cases occurred in Panama, 128 of which were Colombian soldiers from the interior. The disease again commenced in January, 1901, but no record of the number of cases during that year is given. For the number of deaths from this disease during the years 1901 and 1902, reference is made to the mortality statistics compiled by Asst Surg. C. C. Pierce for those years. (See P. H. R., April 8, 1904.)

Other prevalent diseases.—A further examination of the tables reveals the interesting fact that the following diseases, dysentery, beriberi, and tuberculosis, that are to a large extent preventable by proper sanitation, occur with great frequency.

Dysentery.—The mortality statistics for the year show that there were 70 deaths from dysentery, and the hospital records that 22 cases, with 19 deaths, were treated during the year. Furthermore, taking into consideration that 37 cases of diarrhea and enterocolitis, with a mortality of 23, were treated in the San Tomas hospital during the year, and that the mortality statistics show 36 deaths from these diseases, it is safe to assume that dysentery is even more frequent than the statistics would seem to indicate, and must be considered one of the prevalent preventable diseases.

Beriberi is also one of the most frequent diseases, and is much more prevalent than in Colon. The hospital records show that 51 cases, with a mortality of 33, were treated during the year, and the other statistics for the same period give 72 deaths from this disease.

Tuberculosis.—This disease is extremely prevalent and occupies second place in frequency of all diseases. The hospital records show that 109 admissions out of 665 were tuberculosis. Of this number 95 died. The mortality statistics for the same period give 185 deaths from this disease. A further consideration of the data shows that during the year there were 118 deaths from pneumonia, and that in the hospital during the same period 29 cases of this disease, with 28 deaths, were treated. One hundred and eighteen deaths from pneumonia is certainly too high a mortality from this disease, and I believe that the majority of the cases were acute pneumonic tuberculosis, erroneously diagnosed as pneumonia.

A consideration of the most prevalent diseases, and for this purpose I have included malarial fevers, yellow fever, dysentery, beriberi, tuberculosis, pneumonia (because most of the cases are probably tuberculosis), enterocolitis, and diarrhea (these last two, no doubt, dysentery in the majority of cases), shows that out of the 1,270 deaths 749 were due to the diseases above specified, all of which are, to a large extent, preventable by proper sanitary measures. Therefore, with proper sanitary equipment and public health regulations, the mortality of Panama should be reduced 50 per cent.

Death rate.—That the city of Panama is decidedly unhealthy and suffers from a high annual mortality is shown by the mortality statistics of the year 1903, a period when the city was under normal conditions. During the year there were 1,270 deaths from all causes, giving an annual death rate in 18,000 of 70.5 per thousand. However, allowing the contention of a certain class that the population of Panama is 25,000, which, as in almost all instances of this kind, is certain to be high, it still gives Panama an annual death rate of 50.8 per thousand. Taking a mean between the two estimates given and accepting 21,000 as approximately correct, this will give an annual death rate of 60.48 per thousand.

Relative to the economic phase of this situation and the loss which accrues to Panama from its high rate of morbidity, it does not appear necessary to enter into detailed description of the financial losses incident to sickness. It need only be pointed out in a general way that in a town in which one-half of the population is sick during the year for periods of seven days, one month, or longer, this question is a serious one.

Assuming as correct that malarial fever causes 50 per cent of the total morbidity, that yellow fever is of frequent occurrence, that tuberculosis, beriberi, and diarrheal diseases are extremely prevalent, Panama offers a fruitful field for the scientific work of the sanitarian. It seems safe to predict that the sanitary work in connection with the construction of the canal will teach a lesson to the world, by showing what can be accomplished in pest-ridden localities in the Tropics by modern preventive medicine.

TABLE I.—*Classification of diseases treated in the San Tomas Hospital, Panama, January, 1903, to March, 1904.*

Diseases.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Total.	Deaths.
Malarial fever	30	9	6	7	4	2	....	11	4	5	6	6	1	1	92	18
Malarial fever, pernicious	3	5	1	....	1	1	....	....	....	1	....	....	....	1	13	12
Malarial cachexia	1	3	1	....	....	2	3	2	....	1	....	....	....	....	13	3
Yellow fever	6	3	3	3	3	5	3	1	3	1	....	....	3	....	33	26
Smallpox	....	....	....	1	....	1	....	....	....	....	....	....	....	....	2	1
Dysentery	3	6	1	2	4	....	....	2	....	....	2	2	....	....	22	19
Erysipelas	....	....	....	....	....	....	....	....	....	2	1	....	....	....	3	1
Syphilis	2	3	....	1	....	....	....	....	....	1	....	....	....	....	7	5
Leprosy	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Beriberi	3	2	3	6	1	....	2	3	2	14	11	4	9	1	61	33
Tuberculosis	11	15	7	3	5	4	6	9	11	4	11	5	9	9	109	95
Pneumonia	4	1	3	....	2	3	1	3	2	2	2	4	....	2	29	28
Rheumatism	2	1	2	....	....	2	1	2	....	4	1	1	....	....	16	....
Tetanus	....	....	1	....	....	....	....	....	....	....	....	1	....	....	2	2
Scurvy	....	....	1	....	....	....	....	....	....	....	....	1	....	1	3	3
Anæmia	....	1	....	....	....	....	....	....	....	1	....	....	....	....	2	....
Chlorosis	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	1
Addison's disease	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Cerebral congestion	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	1
Cerebral hemorrhage	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....
Cephalalgia	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Meningitis	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	1
Insanity	....	....	....	....	....	2	....	....	....	....	....	....	....	....	2	2
Alcoholism	2	2	3	....	1	1	1	1	3	....	....	1	....	....	15	9
Neuralgia	1	....	....	....	1	....	....	....	....	....	....	....	....	....	2	....
Neurasthenia	....	....	1	....	....	....	1	....	....	....	....	....	....	....	2	....
Neuritis	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....
Keratitis	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Pericarditis	....	....	1	....	....	....	....	....	....	....	....	1	....	....	2	2
Hypertrophy of heart	1	....	2	....	....	....	1	5	3	1	2	....	....	....	15	14
Valvular disease of heart	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	....
Aneurism	....	....	2	....	....	....	....	....	....	1	....	1	....	....	4	3
Coryza	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....

TABLE I.—*Classification of diseases treated in the San Tomas Hospital, Panama, January, 1903, to March, 1904*—Continued.

Diseases.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Total.	Deaths.
Bronchitis	3	2	1				1	3	2	1					13	3
Pleurisy								1			1				2	1
Angina[a]	1														1	
Stomatitis[b]									1						1	1
Indigestion	3	2		1	2			2			1				11	
Gastroenteritis	1														1	1
Enteritis							1								1	
Entero-colitis	4	2		1	5		1	3	1	2				1	20	13
Diarrhea	8		1	2	1	1	1	1		1		1			17	10
Peritonitis							1								1	1
Hemorrhoids			1												1	
Fistula in ano										1					1	
Diseases of liver																
Congestion of liver	1			1							1				3	
Hepatitis								2							2	1
Abscess, liver									1						1	1
Elephantiasis					2										2	
Bubo	1				1					1	1				4	
Onychia	1						1				1				3	
Nephritis	3	2			3				1	3			2	3	17	15
Blenorrhagia	1	1	1			1	1	1			1				7	
Urethral fistula							1								1	
Paraphimosis												1			1	
Architis												1			1	
Dropsy	1	2		1			1				1	2			8	3
Metrorrhagia											1				1	
Metritis[c]											2				2	2
Uterine colic										1		1			2	
Parturition	1														1	1
Gangrene								1							1	1
Carbuncle		1			1										2	1
Abscess			1		1		1						2		5	2
Felon									1						1	
Ulcers	11	6	3	2	1	1	2	6		3	1				36	
Eczema					1										1	
Pemphigus	1														1	
Prurigo			2												2	
Injuries	3	1	2	1	6	2	3	2	2		3	3	1	1	30	5
Senility										1					1	1
No data given	169	132	143	160	169	185	168	158	179	182	172	109	179	196	665	345

[a] Probably angina pectoris. [b] Called infective. [c] Called ulcerative.

Total number of cases no data given	2,301
Number of cases in which diagnosis is given	665
Total of all cases admitted	2,966

TABLE II.—*Mortality statistics of the city of Panama for 1903, showing causes of death.*

[Compiled from official records.]

Diseases or cause of death.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Malarial fever	36	22	12	11	7	19	11	17	10	14	17	14	190
Malarial fever, pernicious	3		3	2	1	2	2	3	1	2	2		21
Malarial cachexia			2										2
Yellow fever	15	9	5	2	4	3	4	10	3				55
Smallpox	1			1	1	2			1	1	1		8
Dysentery	11	11	12	2	8	6	4	5	2	3	2	4	70
Erysipelas					1						1		2
Syphilis	1	1		1			1			1			5
Leprosy									1				1
Beriberi	3	2	4	2	3		4	4	9	24	14	3	72
Tuberculosis	23	18	15	11	16	13	18	13	14	11	23	10	185
Pneumonia	20	12	14	6	8	5	5	14	7	8	8	11	118
Rheumatism	1				1	1		1	3				7
Tetanus		1	2							2	1	1	7
Septicæmia										1	1		2
Scurvy			1				1					1	3
Anæmia	1	1			1		3	1		1	1		9
Pertussis							1			2	6	4	13
Rachitis		1											1
Addison's disease		1											1
Cancer	1								1	2		2	6
Cerebral congestion	1		1	2					1	1	1		7
Cerebral hemorrhage	2		1			1	1	1	1	1		1	9
Meningitis		2	1	1	1	2	1		1			2	11
Insanity						3			2				5
Paralysis		1		1	0	3			1			0	6
Convulsions				1	1	4	3		1		2	1	13
Epilepsy						1	3	1	1			1	7
Nervousness											1		1
Alcoholism	3	2	3		1				2	1			12
Sunstroke										1			1
Heart disease	4	2	6	2	1	1	2	8	4	4	6	2	42
Hemorrhage		1		2	2		1						6
Aneurism			1							1		1	3
Laryngitis							1		1				2
Bronchitis	1	2	2	3	2		1	6	3	2		3	25
Pleurisy											2		2
Dentition			3		3	3	1	3	1	1	3	1	19
Angina	1						1						2
Stomatitis									1				1
Disease of stomach				1			1			1			3
Vomiting												1	1
Gastritis											1		1
Gastro-enteritis	1												1
Colic	2	3	4	1	5	4	4		6	3	2	4	38
Enteritis					1			1					2
Entero colitis	4	2			2		1	3	2	3			17
Diarrhea	1	3	2	1	4	2	3	1		1		1	19
Appendicitis								1					1
Peritonitis							1						1
Diseases of liver	3	2	6	3	3	1	3	1	4	2	3	1	32
Hepatitis						1		2		1			4
Jaundice			1										1
Worms	1	2				2		2		1			8
Gout									1				1
Nephritis	3	1		2	3	1	1	1		5	2	1	20
Dropsy	15	5	3	1		1	6	4	3	4	6	4	52
Metritis											2		2
Parturition	3		1			2			2	1	1	1	11
Abscess	1				1	1							3
Gangrene								1					1
Carbuncle					1								1
Wounds	2		2		1						1		6
Burns		1			1		1	2			1		6
Injuries					1						1	3	5
Accidents	4	2			1				1	3			11
Stillbirth									1			1	2
Execution									1				1
Senility		1		1	1	1	1	1		2		1	9
General debility		1								1	1	2	5
Cause not given	22	6	7			4	6	4			2	2	53
Total	190	118	114	60	87	89	97	111	93	112	115	84	1,270

TABLE III.—*Deaths by nationalities, City of Panama, for the year 1903.*

[Compiled from official records.]

Month.	Foreign white.	West Indian and other negroes.	Central and South Americans.	Chinese.	Total.
January	7	19	162	2	190
February	6	10	98	4	118
March	4	5	102	3	114
April	2	12	42	4	60
May	5	8	71	3	87
June	3	8	75	3	89
July	5	11	74	7	97
August	10	6	87	8	111
September	7	10	71	5	93
October	1	19	87	5	112
November	4	10	96	5	115
December	2	9	67	6	84
Total	56	127	1,032	55	1,270

TABLE IV.—*Deaths by ages, City of Panama, for 1903.*

[Compiled from official records.]

Month.	Under 1 year.	Over 1 and under 5 years.	Over 5 and under 15 years.	Over 15 and under 20 years.	Over 20 and under 30 years.	Over 30 and under 40 years.	Over 40 and under 50 years.	Over 50 and under 60 years.	Over 60 years.	Total.
January	14	7	7	20	53	47	28	10	4	190
February	18	2	4	5	27	14	27	15	6	118
March	15	9	6	12	14	22	24	9	3	114
April	8	3	2	2	13	12	7	5	8	60
May	20	5	3	5	14	19	10	7	4	87
June	26	9	4	2	10	14	10	5	9	89
July	14	10	6	4	19	20	14	4	6	97
August	7	15	4	5	28	21	15	7	9	111
September	12	11	3	2	14	27	16	4	4	93
October	14	7	4	3	21	28	16	10	9	112
November	17	8	2	3	29	27	15	7	7	115
December	19	5	3	4	21	12	8	6	6	84
Total	184	91	48	67	263	263	190	89	75	1,270

COLON, *March 29, 1904.*

Second annual conference of state boards of health convened.

CIRCULAR.

The following is addressed to secretaries of State boards of health:

TREASURY DEPARTMENT,
Washington, April 9, 1904.

DEAR SIR: I have to inform you that the second annual conference of State boards of health with the Public Health and Marine-Hospital Service will be held at the New Willard Hotel, Washington, D. C., on Friday, June 3, 1904, at 10.30 a. m.

In accordance with the terms of the act approved July 1, 1902, each board will be entitled to one representative at this conference.

You are requested to inform the Bureau as early as possible of the name of the delegate who will represent your board.

Respectfully,

WALTER WYMAN,
Surgeon-General.